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be obtained of Mr. Rau, Bethlehem, Pa., or Mr. Hervey, Taunton, Mass.

§ 53. **Botanical News**—*Annual growth of Trees*.—To the Journal of the Royal Society of New South Wales the Rev. G. E. Tenison-Woods contributes some interesting data in regard to the annual growth of trees. He states that a blue gum tree (*Eucalyptus globulus*), known to have been planted eighteen years previously, when cut down was found to have thirty-six concentric rings, *i. e.*, two for each year. As this tree, as well as *E. obliqua* and others, sheds its bark twice every year, he concludes that the sap rises twice a year in these trees.

Sizes of Leaves and Colors of Flowers.—According to the Gardeners' Chronicle, M. Ch. Flahault, in the *Annales des Sciences Naturelles*, brings forward additional observations to support his view that, under equal conditions, the leaves of plants of the same species are larger in proportion as we go northwards; these relatively large dimensions being due to the duration of light of relatively feeble intensity. In cases where the chlorophyll is formed in the absence of light it must be formed at the expense of the materials stored up in the tissues. The importance of these reservoirs of nutriment is still greater in the case of flowers. Thus, in the case of hyacinths, both blue and red, M. Flahault found no difference in the color of the flowers grown in the light or in the dark, the color being manufactured from the stores of materials in the bulbs.

Plant Hairs.—At a recent meeting of the Société Botanique de France, M. Poisson read a paper on "The Adaptive Character of Plant Hairs," and stated that in most climbing plants, as Darwin had shown with regard to the hop, *Galium aparine* and *Rubus australis*, the ridges alone of the stem are furnished with stiff hairs whose tips are bent downwards, while, in the intervals between the ridges, on the upper surface of the leaves, and on the inflorescence, etc., the hairs have a forward or horizontal direction. That these hairs are adapted to enable the plant to climb, is, he considers, evident from the fact that in the dwarf varieties of the haricot beans, which do not climb, these hairs have not a downward direction, and that in the *Loasaceae* and other families, it is the species which climb that alone present this form of hair. Of course, there are exceptions, such as *Dioscorea*, in which the leaves are glabrous, and the stem hairs not bent downward. M. Poisson proposes to turn to account the fact that, in the majority of cases, climbing or twining plants have recurved hairs, by using it as a means of judging from incomplete herbarium specimens whether the specimen is a climbing plant or not.

The April and May numbers of Trimen's *Journal of Botany* contain mostly continued articles; the new papers are, in the April issue, "New Zealand Plants," by Dr. Berggren, and in the May, an article on "Some Dorset Plant-Station," by the Rev. W. Moyle Rogers.

The *Botanical Gazette* for May contains notes on—"New Species of Potamogeton," by Thos. Morong; "Notulae Exiguæ," by Dr.

Gray; "Vitality of Seeds of *Pinus contorta*," by C. S. Sargent; "A *Nolina* in Colorado," by E. L. Greene; "Early Plants," by F. L. Harvey; "*Crataegus tomentosa* var. *punctata*," by E. F. Smith; "Winter Herborizations on Indian River," by W. W. Calkins; Recent Publications.

The first number of Dr. Engler's new botanical journal the *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzenzoographie*—has reached us, and contains articles by Oscar Heer, Alph. de Candolle, Eug. Warming, O. Beccari, and A. Engler, followed by a summary of the important works which appeared in 1879 on Systematic Botany, and on the history and distribution of plants. The novel feature has been introduced into this venture in botanical journalism of publishing communications in the language in which they were written.

Flora of the West Indies.—Baron Eggers, St. Thomas, West Indies, has undertaken to organize a complete exploration of the whole of these islands, especially of those less known. The imperfection of our knowledge of this Flora, and the importance of it in relation to that of North America are well known, and we wish Baron Eggers all success. We presume that the outcome will be a tolerably complete published account of the vegetation of these islands. Meanwhile Baron Eggers proposes to furnish subscribers with sets at very reasonable rates. Full information may be obtained of Baron Eggers, or Dr. Phil. Eug. Warming, Copenhagen, Denmark.

The American Monthly Microscopical Journal.—In the June number the Editor gives notice that he will begin work on the first part of Habirshaw's valuable Catalogue of the Diatomaceae at once, and that Part I. will probably be ready in July. This catalogue will be a complete index to all the published literature describing or figuring the Diatomaceae. The four parts are to be issued in rapid succession; and, as only a small number of extra copies will be printed, those who intend to subscribe should do so immediately.

From the June number of the lively *California Horticulturist* we learn that a new station for *Cheilanthes viscida*, Davenport, has been found at Aqua Caliente, in the same region as the original station, the Cañon of the White Water. This periodical pays a well deserved tribute to the late Charles C. Frost, the eminent cryptogamist of Brattleboro, Vermont.

§ 54. **Necrology**.—Charles C. Frost, one of the pioneers in the study of American Cryptogamous botany, and who was especially well known as a devoted student of the fungi, died at Brattleboro, Vermont, March 16th, in the seventy-fifth year of his age.